

87

Notice of Allowability	Application No.	Applicant(s)	
	10/628,330	MIURA ET AL.	
	Examiner	Art Unit	
	Christopher Verdier	3745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Applicant's Amendment dated September 1, 2006.
2. ☒ The allowed claim(s) is/are 1-3,6-15 and 18-22.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended as follows:

In the Claims:

Claim 1 is amended as follows:

-- 1. (Currently amended) An impeller pump for a fluid, comprising:

a rotary impeller having a first surface and a second surface opposing to each other, each of the first and second surfaces including a plurality of grooves arranged in a circumferential direction of the impeller and spaced from each other by a predetermined pitch;

a pump casing defining a first pump channel and a second pump channel, wherein the rotary impeller is disposed within the pump casing and opposes to the first pump channel and the second pump channel, respectively;

a convergence device arranged and constructed to converge the fluid discharged from the first pump channel and the fluid discharged from the second pump channel;

a pulsation canceling device arranged and constructed to cancel pulsations of the fluid discharged from the first pump channel and the second pump channel,

Art Unit: 3745

respectively; and

an impact reducing device arranged and constructed to reduce impacts produced by at least one of the flow of the fluid from the first pump channel and the flow of the fluid from the second pump channel;

wherein the pump casing further defines a first discharge port and a second discharge port respectively communicating with the first pump channel and the second pump channel and formed separately from each other, so that the fluid is discharged from the first and second channels via the respective first and second discharge ports and is converged at the convergence device; and

wherein the pulsation canceling device is arranged and constructed to displace the first discharge port from the second discharge port by a distance corresponding to half the predetermined pitch of the grooves of the impeller, and the grooves of the impeller defined in the first surface and the grooves of the impeller disposed in the second surface are disposed at the same positions in the circumferential direction of the impeller. --

In claim 10, line 1, "claims" has been changed to -- claim --.

Claim 14 is amended as follows:

-- 14. (Currently amended) An impeller pump comprising:

a rotary impeller having a first surface and a second surface opposing to each other, wherein each of the first and second surface includes a plurality of grooves

arranged in a circumferential direction of the impeller and spaced from each other by a predetermined pitch;

a pump casing;

a first pump channel defined in the pump casing and opposing to the grooves of the first surface of the impeller, wherein the first pump channel communicates with a first suction port and a first discharge port, and the first suction port and the first discharge port are separated from each other by a first partition wall;

a second pump channel defined in the pump casing and opposing to the grooves of the second surface of the impeller, wherein the second pump channel communicates with a second suction port and a second discharge port, and the second suction port and the second discharge port are separated from each other by a second partition wall;

a convergence channel communicating with the first discharge port and the second discharge port, so that the fluid discharged from the first discharge port and the fluid discharged from the second discharge port converge at the convergence channel;

a pulsation canceling device arranged and constructed to cancel pulsations of the fluid discharged from the first discharge port and the second discharge port, respectively;

an impact reducing device arranged and constructed to reduce impacts of the fluid caused by change of direction of at least one of a flow of the fluid discharged from the first pump channel toward the first discharge port and a flow of the fluid discharged from the second pump channel toward the second discharge port; and

at least one communication hole defined in the impeller, the communication hole communicating between a pair of the grooves that are defined in the first surface and the

Art Unit: 3745

second surface, respectively, and oppose to each other in an axial direction of the impeller;

wherein the first discharge port and the second discharge port are formed separately from each other in the pump casing; and

wherein the pulsation canceling device is arranged and constructed to displace the first discharge port from the second discharge port by a distance corresponding to half the predetermined pitch of the grooves of the impeller, and the grooves of the impeller defined in the first surface and the grooves of the impeller disposed in the second surface are disposed at the same positions in the circumferential direction of the impeller. –

In claim 21, line 5, -- of -- has been inserted after “one”.

The above changes to claims 1 and 14 have been made in order to comply with 37 CFR 1.121. Claims 1 and 14 presented by Applicant contain all of the above limitations, but included portions of text which were not underlined. The above changes to claims 10 and 21 have been made to correct obvious informalities.

Examiner's Comment

Applicant has amended independent claims 1 and 14 to include the subject matter of claims 5 and 17, respectively, which features are not disclosed or taught by the prior art.

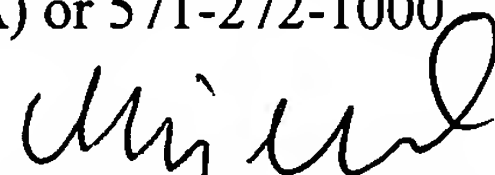
Art Unit: 3745

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher Verdier whose telephone number is (571) 272-4824. The examiner can normally be reached on Monday-Friday from 10:00-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward K. Look can be reached on (571) 272-4820. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

C.V.
September 10, 2006



Christopher Verdier
Primary Examiner
Art Unit 3745